UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R037XA004NM

Site Name: Clayey

Precipitation or Climate Zone: 7 to 10 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on mesas and intermediate terraces. Slopes are nearly level, 0 to 3 percent. Elevations range from 5,500 to 6,400 feet above sea level. Vegetation is not affected by the exposure.

Land Form:

1. Mesas
2. Terraces
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,500	6,400
Slope (percent)	0	3
Water Table Depth (inches)	42	>72

Flooding:	**Minimum**	**Maximum**
Frequency	Rare	Occasional
Duration	Very Brief	Very Brief

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

This site has an arid, mild, dry climate with distinct seasonal temperature variations and large annual and diurnal temperature changes.

Mean annual precipitation varies from 7 to 10 inches. Deviations of 4 inches or more are quite common. Distribution is 65 percent during the native plant growth period, which is from April through September. May and June are the dry months. During July, August, and September, 3.5 inches of precipitation influences the presence and production of warm-season plants. Late fall and winter moisture is conducive to the production of cool-season plants, which usually begin growth in March and end with plant maturity and seed dissemination. This usually takes place in the early part of June when the moisture deficiency and warmer temperatures occur. The Gulf of Mexico is the principal source of moisture for summer precipitation, which is characterized by brief afternoon thunderstorms. Winter moisture occurs as light rain or snow.

Temperatures vary from a mean monthly of 75 degrees F in July to 27 degrees F in January and from a maximum of 106 degrees F to a minimum of 35 degrees F below zero. The average last killing frost in the spring is May 8, and the first killing frost in the fall is October 10. The frost-free season is approximately 160 days. Temperatures are conducive for native grass and forb growth from April through September. Maximum shrub growth occurs in the spring months.

The wind blows most frequently from an easterly direction, however, a majority of the stronger winds (10 – 25 miles per hour) are from a westerly quadrant. Spring is the windiest season. Average hourly wind velocities are near 6 miles per hour. Spring and summer winds increase transpiration rates of native plants and rapidly dry the surface soil. Small soil particles are often displaced by the wind near plants, especially young seedlings.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	114	151
Freeze-free period (days):	143	177
Mean annual precipitation (inches):	7	10

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.46	.70	12.7	43.1
February	.46	.74	18.4	50.8
March	.54	.70	22.7	60.4
April	.42	.56	29.3	70.0
May	.38	.62	37.6	79.5
June	.29	.68	46.6	90.0
July	.68	1.46	54.8	94.6
August	.79	1.83	53.1	91.8
September	.80	1.13	44.3	85.6
October	.78	1.30	31.7	72.4
November	.52	.68	20.9	56.3
December	.54	.64	12.8	46.6

Climate Stations:

				Period		
Station ID	291647	Location	Chaco Canyon Natl. Monument, NM	From: 06/01/22	To:	12/31/01
Station ID	293134	Location	Farmington 3NE, NM	From: 1971	To:	2000
Station ID	293340	Location	Fruitland 2E, NM	From: 01/01/14	To:	12/31/01
Station ID	296465	Location	Otis, NM	From: 02/01/14	To:	12/31/01
Station ID	298284	Location	Shiprock, NM	From: 08/01/26	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soil in this site is deep and well drained. The surface layer is a brown clay loam about 5 inches thick. The subsoil is a reddish brown and light brown clay loam and silty clay loam about 38 inches thick. The substratum is a light brown clay loam about 17 inches thick.

It formed in alluvial and eolian deposits derived from sandstone and shale. Water intake rate is moderate to moderately slow. Roots penetrate easily. Available water-holding capacity ranges from 9 to 11.5 inches in a 5 foot profile.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Clay loam
2. Clay
3. Silty clay

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Clayey
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Moderate slow	Moderate
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	16.00
Sodium Absorption Ratio:	0.00	12.00
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	9	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
The aspect of vegetation on this site is dominantly grassland characterized by short and mid-grasses. Shrubs and perennial forbs are a minor component of the plant community. Annual forbs and grasses occur in relative abundance during spring months in years of above average growing conditions.

Canopy Cover:	
Trees and shrubs	5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	60
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	15
Litter (average depth in cm.)	1

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	210	350	490
Forb	60	100	140
Tree/Shrub/Vine	30	50	70
Lichen			
Moss			
Microbiotic Crusts			
Total	300	500	700

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	PLJA	Galleta	75 – 100	75 – 100
2	BOGR2	Blue Grama	25 – 50	25 – 50
3	ACHY	Indian Ricegrass	15 – 25	15 – 25
4	HECO26 HENE5	Needleandthread New Mexico Feathergrass	15 – 25	15 – 25
5	SPAI	Alkali Sacaton	50 – 75	50 – 75
6	PASM	Western Wheatgrass	15 – 25	15 – 25
7	ELEL5 SPCO4 ARIST	Bottlebrush Squirreltail Spike Dropseed Threeawn spp.	15 – 25	15 - 25

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	PLPA2 OXYTR AMPS SEFLF	Wooly Indianwheat Locoweed spp. Western Ragweed Threadleaf Groundsel	15 – 25	15 - 25

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ARTR2	Big Sagebrush	25 – 50	25 – 50
10	ATCA2	Fourwing Saltbush	15 – 25	15 – 25
11	KRLA2	Winterfat	5 – 15	5 – 15
12	CHVI8 LYPA TETRA	Douglas Rabbitbrush Pale Wolfberry Horsebrush spp.	15 – 25	15 – 25
13	GUSA2	Broom Snakeweed	15 – 25	15 - 25

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Additional plants which are usually grown on this site in varying amounts, dependent on current grazing season conditions are: burrograss, sixweeks fescue, cheatgrass, foxtail barley, sixweeks grama, ring muhly, sunflowers, daisy, milkweed, and verbena.

Plant Growth Curves

Growth Curve ID **0904NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mixed short/mid-grassland with minor shrub and forb components.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	10	25	30	10	3	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This ecological site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, Botta's pocket gopher, deer mouse, sparrow hawk, raven, horned lark, great basin spadefoot toad, short-horned lizard, and gopher snake.

Woody plants are used for nesting by vesper, sage and Brewer's sparrows, which are summer residents.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Alcalde	D
Doak	B
Litle	D
Oro	C
Turley	B
Turley Variant	C
Youngston	B

Recreational Uses:

No Data

Wood Products:

No Data

Other Products:

Grazing:

This site is well suited for grazing use by cattle, sheep, horses, antelope, deer and burros.

Under pressure of uncontrolled grazing, the potential plant community deteriorates, there is a marked increase in amounts of shrubs, cacti, and forbs; shrubs dominate the site.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	6.0 – 11.0
75 – 51	8.0 – 14.0
50 – 26	11.0 – 18.0
25 – 0	18.0 – 26.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Alkali Sacaton	Sporobolus airoides	EP	D	D	D	D	D	P	P	P	U	U	U	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Horses

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Alkali Sacaton	Sporobolus airoides	EP	D	D	D	D	D	P	P	P	U	U	U	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Alkali Sacaton	Sporobolus airoides	EP	U	U	U	U	U	D	D	D	U	U	U	U
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	D	D	D	D	D	D	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Spike Dropseed	Sporobolus contractus	EP	U	U	U	U	D	D	D	U	U	U	U	U
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P
Galleta	Pleuraphis jamesii	EP	U	U	U	U	U	D	D	D	D	D	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites:

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **San Juan**

Latitude:

Longitude:

Township: **26 N**

Range: **9 W**

Section: **8**

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: **A typical pedon of Doak clay loam, in San Juan County, New Mexico, 2,505 feet north, 2,171 feet west of the southwest corner of section 8, T. 26 N., R. 9 W.**

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the San Juan River Valley, Mesas and Plateaus 37 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys : San Juan, McKinley.

Characteristic Soils Are:	
Doak	
Other Soils included are:	
Alcalde, Litle, Oro, Turley, Youngston	

Site Description Approval:

Author	**Date**	**Approval**	**Date**
Don Sylvester	03/07/79	Don Sylvester	03/07/79

Site Description Revision:

Author	**Date**	**Approval**	**Date**
Elizabeth Wright	07/08/02	George Chavez	2/12/03